Ham-Homebrew Digest   Sun, 12 Jun 94   Volume 94 : Issue 159

Today's Topics:
                      Help indentify 2SC2694
                   PCB layout software for Mac?
              PCB layout software for PC (2 msgs)
          Super Sensitive FSM Circuit wanted (3 msgs)
        Wide Range Freq. Descriminator circuit wanted (2 msgs)

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Sat, 11 Jun 1994 01:21:55 GMT
From: ihnp4.ucsd.edu!swrinde!howland.reston.ans.net!spool.mu.edu!torn!nott!cunews!
freenet.carleton.ca!FreeNet.Carleton.CA!at091@network.ucsd.edu
Subject: Help indentify 2SC2694
To: ham-homebrew@ucsd.edu

hello david my name is jake ve2tqx
the transistors are listed in ecg catalog there description are

t-npn si rf po 136-174mhz 80watts case t60

bv cbo 36 bv ceo 18   bv ebo 4 max coll current 20 amps max diss watts 250

 current gain hfe 35 typ case rf-50f6 package t60

any cross reference book ecg philips nte any of them can be bought from tv
parts distributor

73's hope this helps jake ve2tqx at091

##follow-up directed to sci.electronics##

I have used (not very heavily) Vamp Inc. McCad PCB-1 Design v. 4.02 and
I just got Douglas CAD/CAM Extended Layout 7.0 and do not have yet much
experience with it. Both programs are priced around $400 - $500, depending
on options.

NOTE: These are the non-professional packages. I'm not in a position to
easily spend thousands of $$ for a professional package. I just want a
reliable and easy-to-use basic PCB design program for our electronic
workshop prototype production. Both Douglas and Vamp Inc. do have
nice professional packages.

Some info on the non-professional programs:

****
Program: Douglas CAD/CAM Extended Layout 7.0 (06-Jul-92),
         Print 7.0
         Pen Plot 7.20 (separate product)
         $395 (layout), add $125 for pen plot option

         Douglas Electronics Inc.
         2777 Alvarado St.
         San Leandro, CA 94577
         (510) 483-8770

grid size: 0.001 - 1.000 inch. Display scaling 20% to 1000%
line width: 0.001 - 0.250 inch.
pad size: 0.001 - 0.250 inch (size, hole size and shape adjustable)
hole size: 0.020 - 0.250 inch

All sizes are adjustable in steps of 0.001 inch.

Templates:

There are no ready-made IC or SMT component templates. For that purpose

you will have to build your own patterns and pads. Not a big problem, unless
you mix lots of different DIL and surface-mount components on the same
circuit.

Layers:

Component side and solder side. One or both can be visible at the same time.
- Text can be placed only on component side.

+ Customization is possible.
The basic elements are lines (rounded ends), holes and squares. A zero
length lines is a round pad. You can have a set of 7 lines, 7 squares,
7 holes, 35 pads and 35 patterns. A pad or a pattern is anything you
can create from lines, holes, squares, other pads and other patterns.

- There is no way of copying or pasting stuff from one drawing to
another one (unless you use a copy of the first one as a template).

Reliability:

I haven't used the program enough to comment on reliability.

****
Program: McCad PCB-1 Design v. 4.02 (31-May-93)
         $400 - $500 for the program, pen plotter support built-in

            Vamp Inc.
            6753 Selma Ave.
            Los Angeles, CA   90028
            (213) 466-5533

grid size: 10, 20, 25, 50, 100, 125, 150, 156, 200 and 250 mils
                  auto-grid can be switched off.
line width: 0.007 - 0.5 inch, a set of 22 widths
pad size: 0.030 - 0.5 inch, a set of 22 pad sizes
                  available pad shapes are round, square, rectangular (2:1)
                  and elliptical (2:1).
hole size: 0.012 - 0.500, a predefined set of 22 sizes ("zero" included)

Templates: DIL for normal and surface-mounted IC:s
           16 - 58 pin LCC and 28 - 56 mini flat pack SMT components
           DB-9, DB-15, DB-25, DB-37 connectors
           "Lines" - fill area with lines spaced at 1 grid unit
           "pads" - fill area with pads placed at every grid point

Layers:

There are 9 different layers (top silk, top, top pads, inner-1, inner2,
common, bottom silk, bottom pads, bottom) and you can set the visibility
and drawing colors for each layer separately. You can also specify
multiple layers to be printed in the same printer/plotter image.

- Not customizable. Fortunately the template selection is quite large.

+ Copying and pasting between drawings is possible in McCad PCB.

Reliability:

- I have found the McCad PCB-1 v 4.04 to be a fine but unreliable program.
We have spent lots of hours and days trying to figure out ways of
circumventing different bugs in the program. The resulting PCBs from a
PostScript printer can differ quite a bit compared to pen-plotter output.
Every other time when trying to create HPGL plotter files for our PCB lab
the program crashes completely and screws up its own settings. So
we end up copying a "fresh" version of the program to the hard disk
quite often... Our problems might be related to out operating system
(6.0.7 Finnish version) or equipment (mac plus, mac II) or something
else. If anyone has information on these problems please tell me...

On the other hand, another lab here uses the McCad PCB ESD "professional"
version with no problems. Alas, there is more than one order of magnitude
difference between the prices of the McCad PCB-1 and McCad PCB ESD.

****

We have had some problems in communicating with the Vamp Inc. No such
problems existed with Douglas Eletronics. Maybe Vamp was not interested
in selling low-end programs.

If there is need I'll post this subjective and biased comparision of
the two programs again in beginning of September after getting some
experience with the Douglas package. Someone else with more experience
on these non-professional programs might want to comment on this
subject too. Any comments are very welcome!

--
Kim Fallstrom   I   email: kfa@hut.fi
HUT Laboratory of Physics   I   tel: 358-0-451 3143
Finland   I   fax: 358-0-451 3116

Date: Fri, 10 Jun 1994 18:38:39 GMT

From: lll-winken.llnl.gov!sol.ctr.columbia.edu!howland.reston.ans.net!swrinde!
emory!rsiatl!ke4zv!gary@ames.arpa
Subject: PCB layout software for PC
To: ham-homebrew@ucsd.edu

In article <Cr6KpB.9G5@news.ess.harris.com> gdian22@rfc.comm.harris.com (Gary M
Diana) writes:
>Hello All -
>
>   For a while now, I have been making PC boards using magazine
>artwork and the toner method. Now I want to make my own artwork
>from a schematic. Any advice on software that will fit the bill?
>
>   Operating Environment:
>   1. This is a hobby effort, so cost has to be kept low
>   2. The boards will all be one layer, on single sided board.
>   3. The software can be DOS or windows-based.
>
>Thanks. I'd like to make artwork (then boards) for some of the projects
>described in "Solid State Design for the Radio Amateur".

I've used a DOS layout program called PCBoards, $50. There's an optional
schematic capture program called SuperCad, and an autorouter called PCRoute.
The latter two are $99 each. The programs are mouse aware, but can operate
without one. EGA required, VGA preferred. The layout program is strictly
snap to grid, but that's not a serious limitation for most things. It has
good parts libraries, and you can make your own and add them to the library.
There are drivers for plotters and laser printers as well as Epson dot
matrix support.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

Date: 11 Jun 1994 22:47:39 GMT
From: ihnp4.ucsd.edu!usc!sol.ctr.columbia.edu!hamblin.math.byu.edu!news.byu.edu!
news@network.ucsd.edu
Subject: PCB layout software for PC
To: ham-homebrew@ucsd.edu

Gary M Diana (gdian22@rfc.comm.harris.com) wrote:
| For a while now, I have been making PC boards using magazine
| artwork and the toner method. Now I want to make my own artwork

| from a schematic. Any advice on software that will fit the bill?

| Operating Environment:
| 1. This is a hobby effort, so cost has to be kept low
| 2. The boards will all be one layer, on single sided board.
| 3. The software can be DOS or windows-based.

There's a fully functional (although of limited capability; I've
forgotten what the limits are) demo of PADS available. I haven't
figured out how to do auto placing and/or auto routing from a schematic
yet, but manual placement and routing seems to work well.

--
Ed Haymore | AA6EJ
ed@byu.edu | Es perillos abocar-se.

Date: 11 Jun 1994 12:30:24 GMT
From: noc.near.net!chaos.dac.neu.edu!chaos.dac!dean@uunet.uu.net
Subject: Super Sensitive FSM Circuit wanted
To: ham-homebrew@ucsd.edu

Hi:
     Does anyone have a circuit for a super-sensitive field strength
meter? Something w/ an amp that can sniff RF for miles! Thanks for your
help.

-Dean

Date: Sat, 11 Jun 1994 18:57:22 GMT
From: ihnp4.ucsd.edu!agate!usenet.ins.cwru.edu!news.ysu.edu!malgudi.oar.net!witch!
ted!mjsilva@network.ucsd.edu
Subject: Super Sensitive FSM Circuit wanted
To: ham-homebrew@ucsd.edu

In article <DEAN.94Jun11083024@splinter.coe.neu.edu>, Dean Gelabert
(dean@splinter.coe.neu.edu) writes:
>Hi:
>   Does anyone have a circuit for a super-sensitive field strength
>meter? Something w/ an amp that can sniff RF for miles! Thanks for your
>help.
>

You mean a receiver? But seriously, when you have that much

sensitivity, you really do need some kind of frequency selectivity or
you'll never be sure if the RF on the meter is the RF you're trying to
"sniff." Tell us what you want it for and maybe we can be more
helpful.

Mike, KK6GM

Date: 11 Jun 1994 21:47:52 GMT
From: ihnp4.ucsd.edu!agate!headwall.Stanford.EDU!w6yx.stanford.edu!
stevem@network.ucsd.edu
Subject: Super Sensitive FSM Circuit wanted
To: ham-homebrew@ucsd.edu

In article <DEAN.94Jun11083024@splinter.coe.neu.edu>
dean@splinter.coe.northeastern.edu writes:
>Hi:
>   Does anyone have a circuit for a super-sensitive field strength
>meter? Something w/ an amp that can sniff RF for miles! Thanks for your
>help.
>
>-Dean

Unfortunately, the kind of field strength meter you are talking about
would, in addition to the amplifier, need a great deal of selectivity
such that it did not respond to undesired local transmitters or more
powerfull distant ones. It sounds like what you really need is a small
receiver with an S-Meter. At least, the complexity would be about the
same.

Steve Muther WF6R

stevem@w6yx.stanford.edu (Stanford Univ. ARC)
steve_muther@3mail.3com.com (3Com Corp.)

Date: 12 Jun 94 07:39:48 GMT
From: news.delphi.com!BIX.com!jdow@uunet.uu.net
Subject: Wide Range Freq. Descriminator circuit wanted
To: ham-homebrew@ucsd.edu

dean@splinter.coe.neu.edu (Dean Gelabert) writes:

>Hi:

>   Does anyone have a simple circuit for a wide range freq. descriminator?
>Something w/ a range of 30Mhz-1Ghz or so. Thanks for your help.
>-Dean

Ah, how accurate do you want it? Is the input constant amplitude already?
If it is constant amplitude you can then capacitor couple it with a VERY
small capacitor and meter the output voltage. But that is TERRIBLY messy.
You could up-convert to say 4 or 5GHz and use a transmission-line
discriminator or a PLL discriminator. But that also is awkward. Nothing
simple presents itself. Maybe more details would help.
{^_^}

Date: 12 Jun 94 07:43:39 GMT
From: news.delphi.com!BIX.com!jdow@uunet.uu.net
Subject: Wide Range Freq. Descriminator circuit wanted
To: ham-homebrew@ucsd.edu

rkarlqu@scd.hp.com (Richard Karlquist) writes:

>In article <DEAN.94Jun10043709@splinter.coe.neu.edu>,
>Dean Gelabert <dean@splinter.coe.northeastern.edu> wrote:
>>Hi:
>>   Does anyone have a simple circuit for a wide range freq. descriminator?
>>Something w/ a range of 30Mhz-1Ghz or so. Thanks for your help.
>>-Dean

>Use an MC10E016 to divide by 256, then use an MC10ELT21 to convert from ECL
>to TTL, and then use a 74LS109 dual flip flop to divide by 4. You now have
>a range of about 30 kHz. to 1 MHz. Use a frequency-to-voltage converter
>as a discriminator on this signal. Analog Devices makes some
>good F/V converters.

>Rick Karlquist N6RK
>rkarlqu@scd.hp.com

That'd be good for a frequency meter anyway. It might do gnarsties if he is
trying to demodulate things or get a "near instant" frequency determination.
We DO need more data re the application, nie?
{^_-}

End of Ham-Homebrew Digest V94 #159
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